Name of Organization: Natural Resources Research Institue

Type of Organization: College or University

Contact Information: Dr. Jeffrey Schuldt

Natural Resources Research Institute

5013 MIller Trunk Highway

Duluth MN 55811

Phone: (218) 720 - 4288 **Extension:**

Fax: (218) 720 - 4328

E-Mail: jschuldt@nrri.umn.edu

Project Title: Coastal Habitat Requirments for Coaster Brook Trout

Project Category: Habitat (Ecological) Protection and Rest

Rank by Organization (if applicable): 0

Total Funding Requested ($): 244,834 **Project Duration:** 2 Years

Abstract:

Coaster brook trout inhabit littoral waters of Lake Superior and spawn in tributary streams. Populations have been decimated through over fishing and habitat degradation, and re-establishment of this species to its historic range is mandated by state, federal, and international policy. Although coasters spend a large portion of life in Lake Superior, there is scant knowledege of critical habitat. By using mapping technology, radio telemetry, and GIS, we propose to intensively sample regions where coasters are known to exist in Lake Superior to identify coastal habitat characteristics for this indigenous species. Further, we propose to identify areas outside the current range of this species, where rehabilitation efforts will be most feasible. Throughout this effort we will collaborate with Native American, U. S., and Canadian federal and institutional entities to integrate existing and new data.

Geographic Areas Affected by the Project

States:

☐ Illinois	☐ New York	☒ Superior	☐ Erie
☐ Indiana	☐ Pennsylvania	☐ Huron	☐ Ontario
☒ Michigan	☒ Wisconsin	☐ Michigan	☐ All Lakes
☒ Minnesota	☐ Ohio		

Lakes:

Geographic Initiatives:

☐ Greater Chicago ☐ NE Ohio ☐ NW Indiana ☐ SE Michigan ☐ Lake St. Clair

Primary Affected Area of Concern: Not Applicable

Other Affected Areas of Concern:

For Habitat Projects Only:

Primary Affected Biodiversity Investment Area: Lake Superior Highlands/Isle Royale

Other Affected Biodiversity Investment Areas:

Problem Statement:

Restoration and maintenance of self-sustaining populations of indigenous species is a goal of the Great Lakes Fishery Commission, Lake Superior Fish Community Objectives and the Lake Superior LaMP. Coaster brook trout are a potadromous form of brook trout which spawn in tributary streams, but also spend large portions of time residing in the coastal waters of Lake Superior as juveniles and adults. Coaster brook trout were once ubiquitous to the tributaries and coastal areas of Lake Superior, but are now found only in isolated areas along the Minnesota north shore, the Canadian north shore, and Isle Royale. The coastal habitats required by coaster brook trout are unknown. Preliminary radio-telemetry studies have shown that coaster brook trout congregate in specific areas, but these areas have not been described in terms of potential habitat needs such as substrate types, food resources, or predator abundance. We propose to comprehensively quantify the habitats used by coaster brook trout in coastal waters of Lake Superior, thereby generating pertinent information necessary to restore this valuable species. This study will integrate hydroacoustic mapping techniques, radio telemetry, traditional limnological and biological sampling, and a geographic information system (GIS) to quantify fish habitat.

Proposed Work Outcome:

This project will use hydroacoustic substrate and bathymetric mapping, limnological assessments, benthic sampling, and forage fish sampling to define the habitats coaster brook trout utilize.

The results of this project will be linked to the results of a recently completed study of stream habitat required by coaster brook trout. The outcome of this effort will include identification of areas important for coaster brook trout rehabilitation, comprehensive GIS based maps of these areas, and recommendations to responsible agencies for protection and management.

An outreach component is integral to this study because it has been hypothesized that coaster brook trout are highly susceptible to overexploitation by sport anglers and even minor habitat degradation. We intend to disseminate our findings via internet technology, talks given to various wildlife user groups, and popular media.

Project Milestones:	Dates:
Project Start	10/2000
Preliminary site ID and survey	11/2000
Compilation of existing geographic info.	05/2001
Completion of 1st year surveys	10/2001
Synthesis of year 1 data	05/2002
Completion of spring surveys	06/2002
Synthesis of all existing data	09/2002
Project End	09/2002

☐ Project Addresses Environmental Justice

If So, Description of How:

☒ Project Addresses Education/Outreach

If So, Description of How:

It will be critical to share our results with management entities and the general public because coaster brook trout are susceptible to anthropogenic effects. We will create a web page describing coaster brook trout biology, our ongoing activities, and our results. We will publicize this project in regional newspapers and NRRI Now, a quarterly newsletter describing the activies of the Natural Resources Research Institute. We will also speak to interested fish and wildlife user and conservation groups.

Project Budget:

	Federal Share Requested ($)	Applicant's Share ($)
Personnel:	105,000	7,242
Fringe:	28,770	0
Travel:	15,000	0
Equipment:	3,000	5,000
Supplies:	6,000	0
Contracts:	12,000	0
Construction:	0	0
Other:	0	0
Total Direct Costs:	169,770	12,242
Indirect Costs:	75,064	0
Total:	244,834	12,242
Projected Income:	0	0

Funding by Other Organizations (Names, Amounts, Description of Commitments):

Description of Collaboration/Community Based Support:

Rob Mackereth (Ontario Minestry of Natural Resources; Lake Head University, Thunder Bay, Ontario) and Henry Quinlan and Lee Newman (U.S. Fish and Wildlife Service) have agreed to participate in this study, conjoining previously collected radio telemetry data with proposed mapping data. Collaboration with local and regional management agenices and academic institutions is imperative for the success of this endeavor. In addition we hope to work closely with the Grand Portage Band of Minnesota Chippewa but details have not been finalized.